INSTALLATION INSTRUCTIONS
for the
Knight Model L
Track Mounted Operating Light

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INSTALLATION INSTRUCTIONS for the *Knight Model L Track Mounted Operating Light*

SECTION I - GENERAL INFORMATION

1. DESCRIPTION

The Knight Model "L" Track Mounted Operating Light consists of a light head and arm assembly that is installed to the ceiling with a track and suspension tube (See Figure 1).

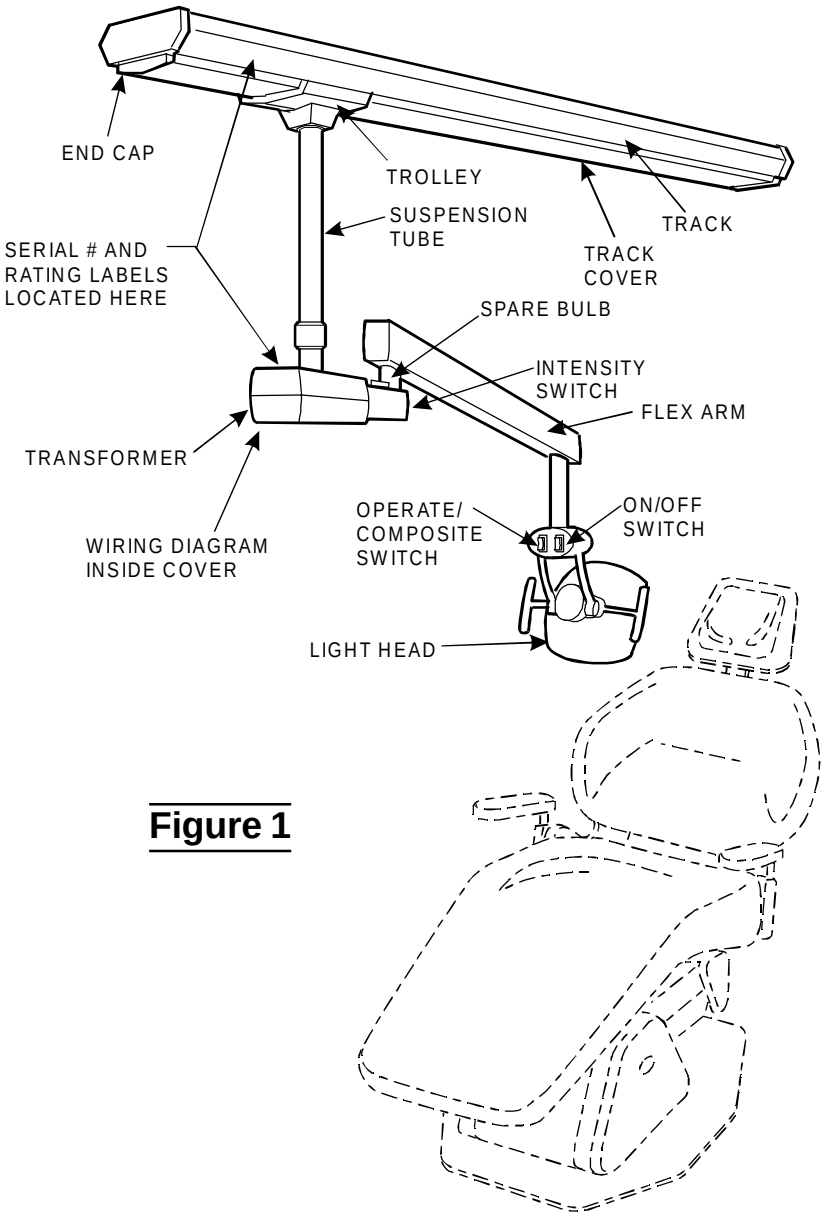


Figure 1

This equipment is rated Class I, Type B

CONFORMS TO UL STD. 544
CERTIFIED TO CAN/CSA - C22.2 NO. 125-M 1984

SECTION I - GENERAL INFORMATION (CONT)

2. ELECTRICAL REQUIREMENTS:

Before connecting the line cord to the electrical source, make certain that the circuit is protected by a 15-amp circuit breaker for 120-VAC models, or a 7.5-amp breaker for 240-VAC models. Ensure that all wiring is grounded and all electrical codes are observed.

WARNING - Potential shock hazard with possible personal injury. To reduce shock hazard, observe all electrical codes.

3. WIRING DIAGRAM:

The wiring diagram for the light is located on the inside of the transformer cover (See Figure 1).

4. UNPACKING THE CARTONS

The light is shipped in two cartons containing the following items:

Rectangle Carton

- Light arm and head assembly
- Small hardware bag
- Technical publication folder containing; Installation Instructions (this manual), Operator's Manual, and Warranty Card

Long Carton

- Track and Trolley assembly
- Small hardware bag
- Pre-installation manual

Check for signs of damage to either the carton or to the contents and that all items listed above are present. If there is any evidence of damage due to shipping or if any of the items is missing from the carton, notify the shipper at once. Be careful not to discard any small parts or instruction sheets with the packing material.

SECTION II - INSTALLATION

1. INSTALLING THE TRACK

CAUTION: This light requires careful consideration of location, wiring and ceiling support structure. Please refer to the Pre-installation instructions provided with this light.

DANGER: Turn off all electrical power at the power source before making primary electrical connections.

1. Remove the end caps and slide the bottom cover out of the track (See Figure 2).

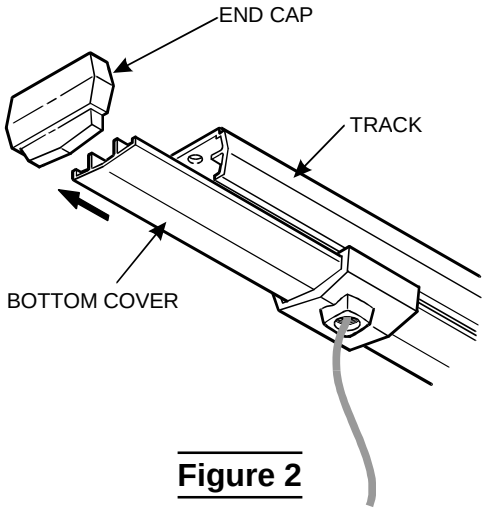
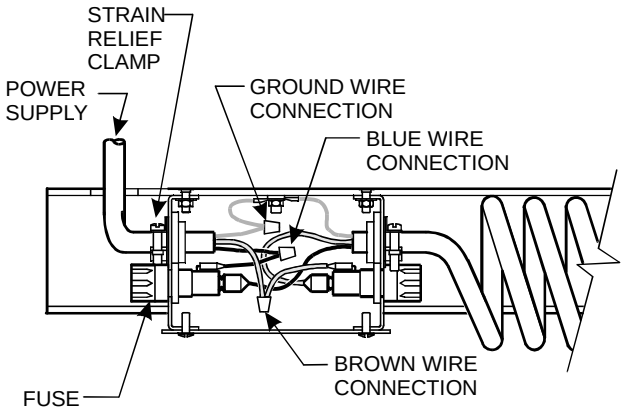
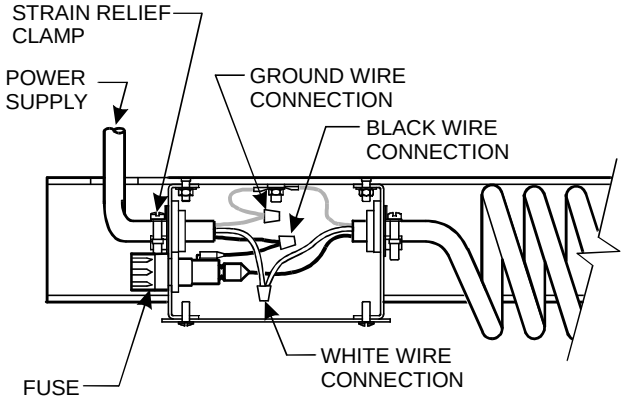


Figure 2



WIRING FOR 240 VOLT



WIRING FOR 120 VOLT

Figure 4

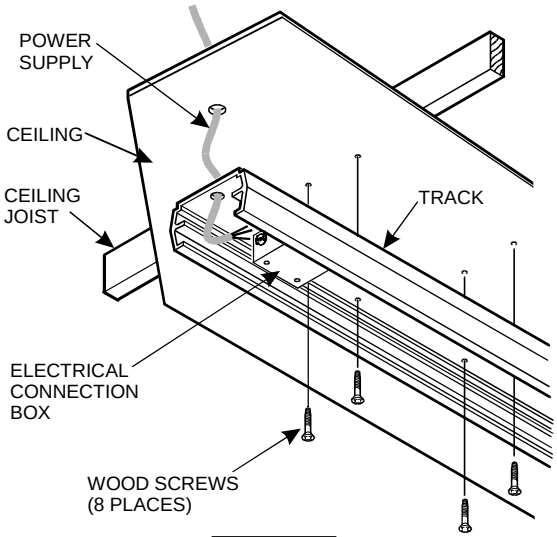


Figure 3

2. Mount the track to the ceiling using the eight wood screws provided (See Figure 3). Refer to the Pre-installation Manual also.

3. Connect the power supply to the track as illustrated in Figure 4. Refer to the Pre-Installation Manual and Section I Paragraph 2 of this Manual.

4. Reinstall bottom cover and end caps.

SECTION II - INSTALLATION (CONT)

2. INSTALLING THE SUSPENSION TUBE

1. Insert the track cable and plug through the suspension tube (See Figure 5).

2. Thread the suspension tube into the trolley hand tight. Turn the tube backwards until one of the slots in the tube lines up with the locking pin hole in the trolley. (See Figure 5).

3. Insert the locking pin through the trolley and suspension tube. Secure the pin with the two retaining screws provided.

WARNING: Be sure to apply loctite to the threads on the two retaining screws that hold the locking pin in place.

3. INSTALLING THE LIGHT HEAD AND ARM ASSEMBLY

After the suspension tube is in place, install the light head and arm assembly using the following procedure:

1. Insert the track wires and plug through the retaining collar and connect to the transformer plug (See Figure 5).

2. Lift the light head and arm assembly up and insert the mounting post into the suspension tube.

3. Slide the retaining collar up and insert the mounting pin into slot in the mounting post. This pin will rest in the groove on the suspension tube (See Figure 6).

4. Slide the retaining collar down over the mounting post end to hold in the mounting pin.

5. Remove the packing materials, tape, etc. from the light head and discard them.

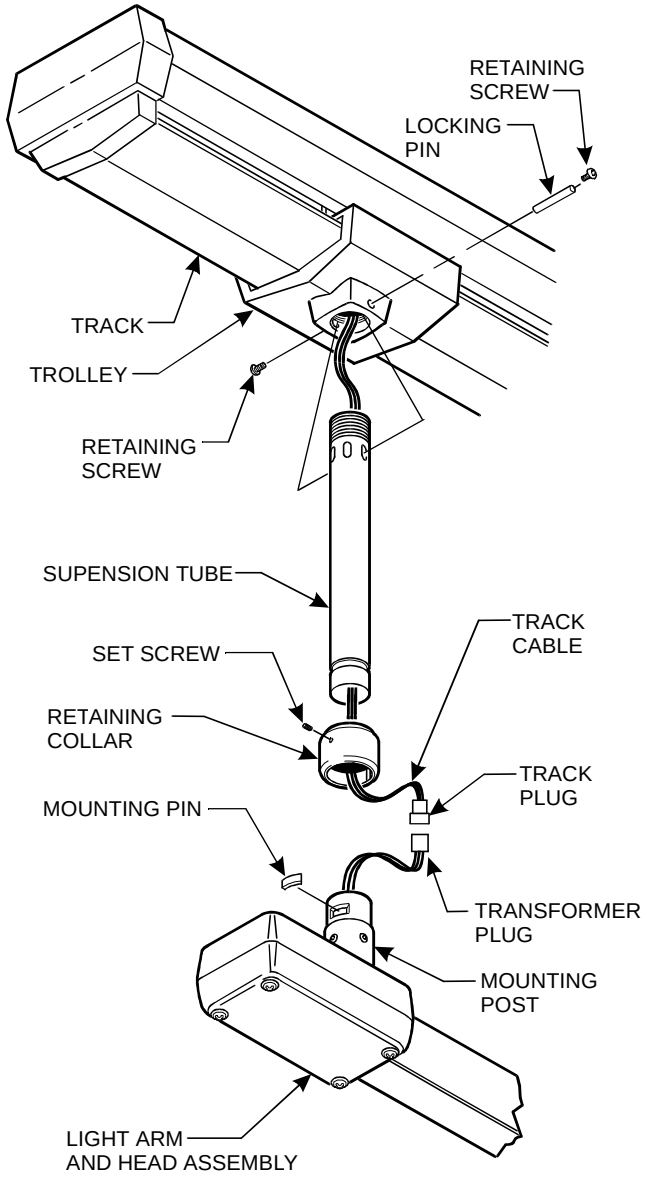


Figure 5

SECTION II - INSTALLATION (CONT)

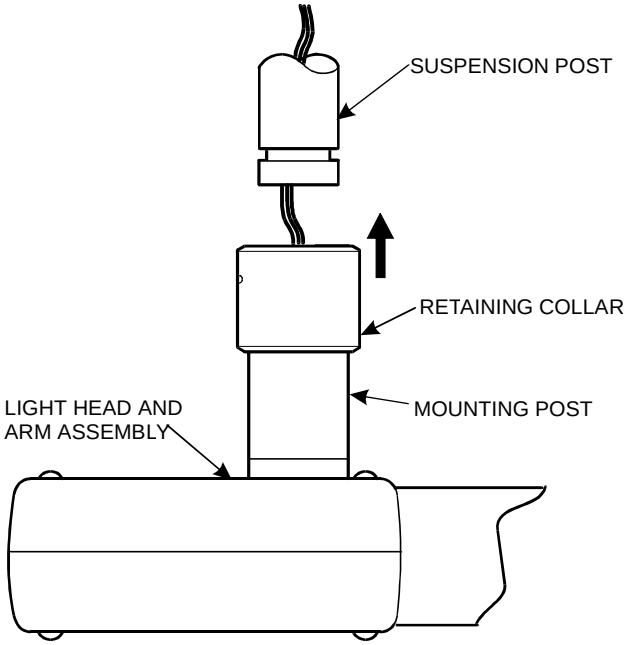


Figure 6

4. SETTING THE MOUNTING POST STOP ROTATION

The ceiling light rotates at the mounting post and limits to this rotation must be set using the following procedure:

1. Rotate the light arm and head assembly in one direction until the mounting post begins to rotate.

2. Continue to rotate the assembly until the desired stop position is reached.

CAUTION: When setting the mounting post stop rotation, do not rotate the light more than 360^0. This may cause the light cable to become twisted.

3. Position the set screw in the retaining collar directly over the mounting pin and tighten in place. This will stop the rotation in this direction (See Figure 6).

4. Rotate the light in the opposite direction. The light should rotate 280^0 before reaching the second stop position.

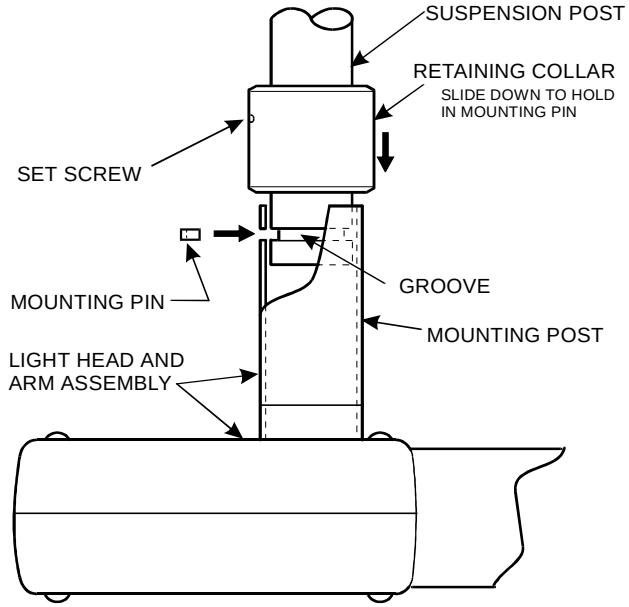


Figure 7

SECTION III - OPERATIONAL CHECKS

When the installation is complete, certain operational checks should be made, as follows:

1. OPERATE/COMPOSITE SWITCH

This switch offers the operator the following choice of functions (Refer to Figure 8):

1. OPERATE POSITION: This position is for normal operation and allows the light intensity to be adjusted by the intensity switch (High, Medium and Low Intensity).

2. COMPOSITE POSITION: This position provides the operator with reduced color temperature lighting when working with photosensitive composites.

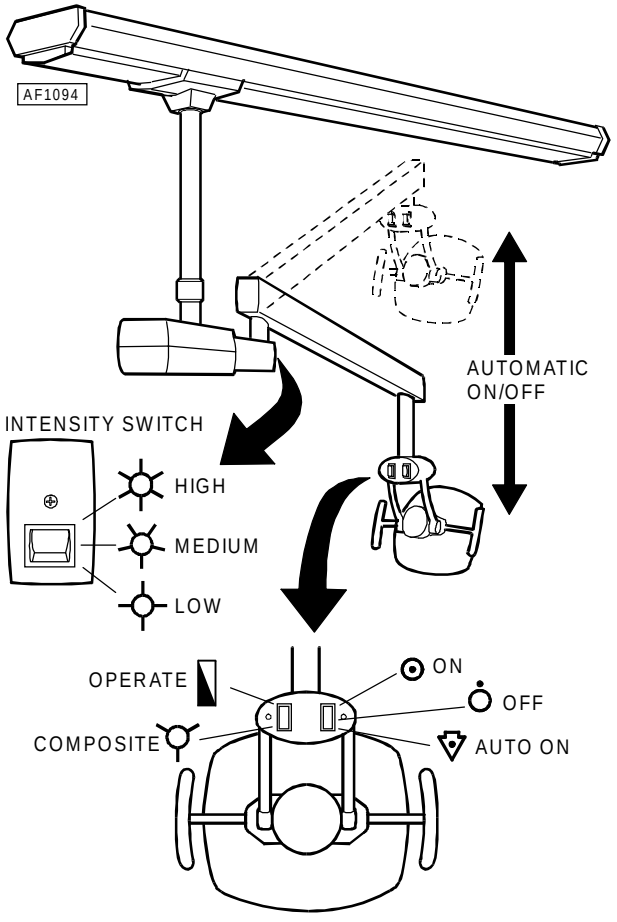


Figure 8

2. THREE POSITION SWITCH

The three position switch is located on the back of the light head. This switch provides three functions, On, Off and Auto On/Off (Refer to Figure 8).

Automatic ON/OFF Position

1. Push the switch to the Auto On Position.
2. Lift the light up until it shuts off. As the light is lifted up and out of the operating position, a limit switch in the arm automatically turns the light off.
3 Lower the light into operating position. The light should come on as it is lowered.

Manual ON Position and OFF position

These two positions override the auto switch and turn the light off or on.

3. INTENSITY SWITCH

The intensity switch is located at the end of the fixed arm. This switch controls the light intensity and offers three intensity settings (High, Medium, Low). Operate the switch to make sure it is functioning properly (Refer to Figure 8).

SECTION IV - ADJUSTMENTS

All Model "L" Lights are pre-set at the factory and should not require any adjustment. However, if adjustment is desired, read and follow the directions in this section carefully.

1. LIGHT FOCUS ADJUSTMENT

This adjustment affects the sharpness of the light pattern at a specified distance. To set the focus, use the following procedure:

1. Position the light 21 to 39 inches (53 to 99 cm) from a target (wall, chair back, etc.) and turn on the light.

2. Insert the 9/64" allen wrench provided into the hole in the back cover of the light to reach the focus adjusting screw inside (See Figure 9).

3. Loosen or tighten the screw until the desired pattern is obtained. We suggest a nominal pattern size of 3 x 8 inches (8 x 20cm), oval in shape, with feathered edges.

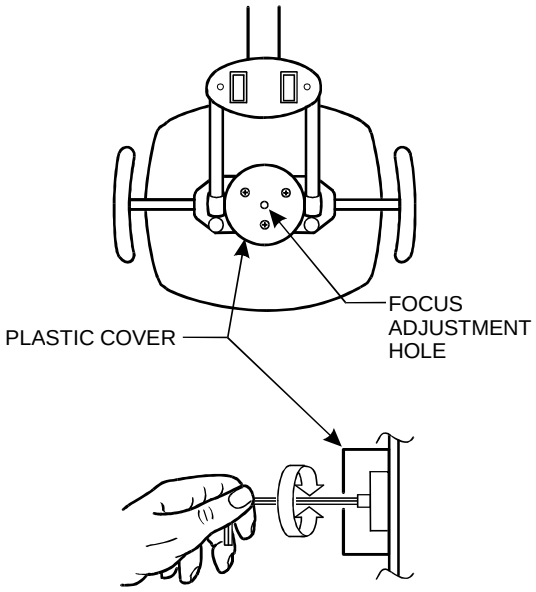


Figure 9

2. LIGHT HEAD ROTATION ADJUSTMENT

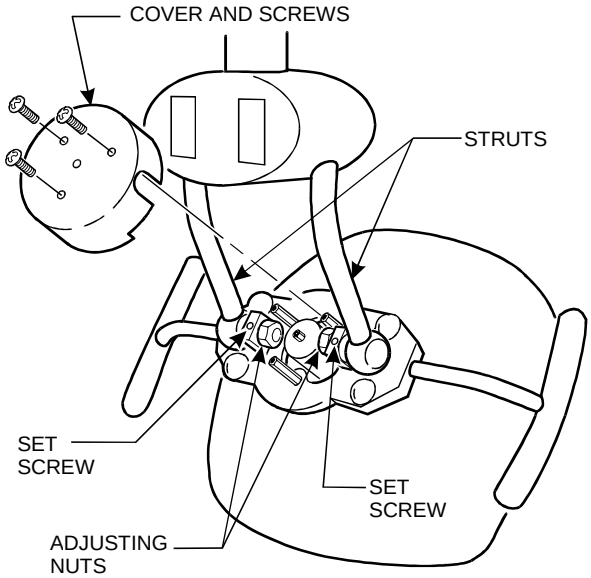
The light head rotates between two struts and is held in place with special hardware. This hardware provides the necessary tension to hold the light in any position it is moved to. If the tension ever needs to be increased, please use the following procedure:

1. Remove the back cover and three screws (See Figure 10).

2. Loosen each set screw one turn maximum, using an allen wrench.

3. Using an open end wrench, tighten the adjusting nuts on each side 1/8 turn. Check the movement of the light head. Repeat until the tension is satisfactory.

4. Retighten the set screws and replace the back cover and screws.



SOME DETAILS REMOVED FOR CLARITY

Figure 10

SECTION IV - ADJUSTMENTS (CONT)

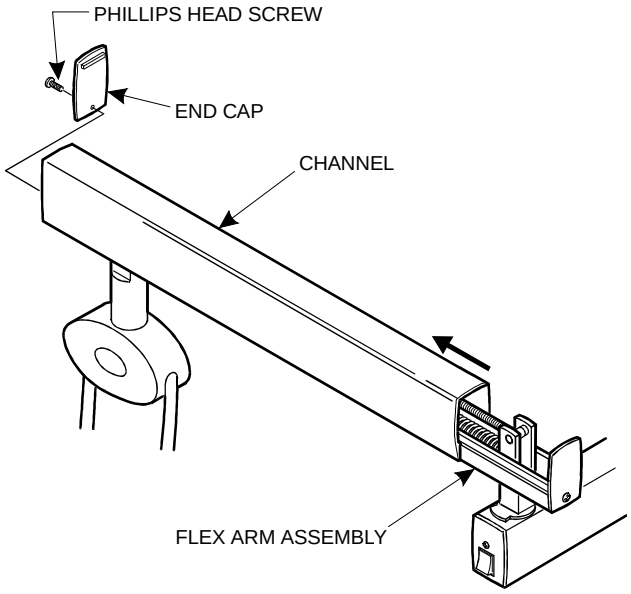


Figure 11

3. FLEX ARM TENSION ADJUSTMENT

This adjustment affects the movement of the light head and arm as follows:

- **Proper adjustment** - When the flex arm tension is adjusted properly, the light can be easily moved into the desired position and will stay in this position without any downward drift.
- **Not enough tension** - If the tension on the compression spring is too little, the light may drift out of position as it is pulled down by its own weight.
- **Too much tension** - If the tension on the compression spring is too great, the arm will feel stiff and be difficult to position. The light head and arm assembly may even drift upward because of the excessive tension.

Use the following procedure to adjust the flex arm tension:

1. To expose the interior of the flex arm, remove the end cap and screw and slide the channel off the assembly (See Figure 11).

2. Tighten or loosen the nut on the threaded rod to increase or decrease the tension on the compression spring (See Figure 12).

3. Slide the channel back on the flex arm and replace the end cap and screw.

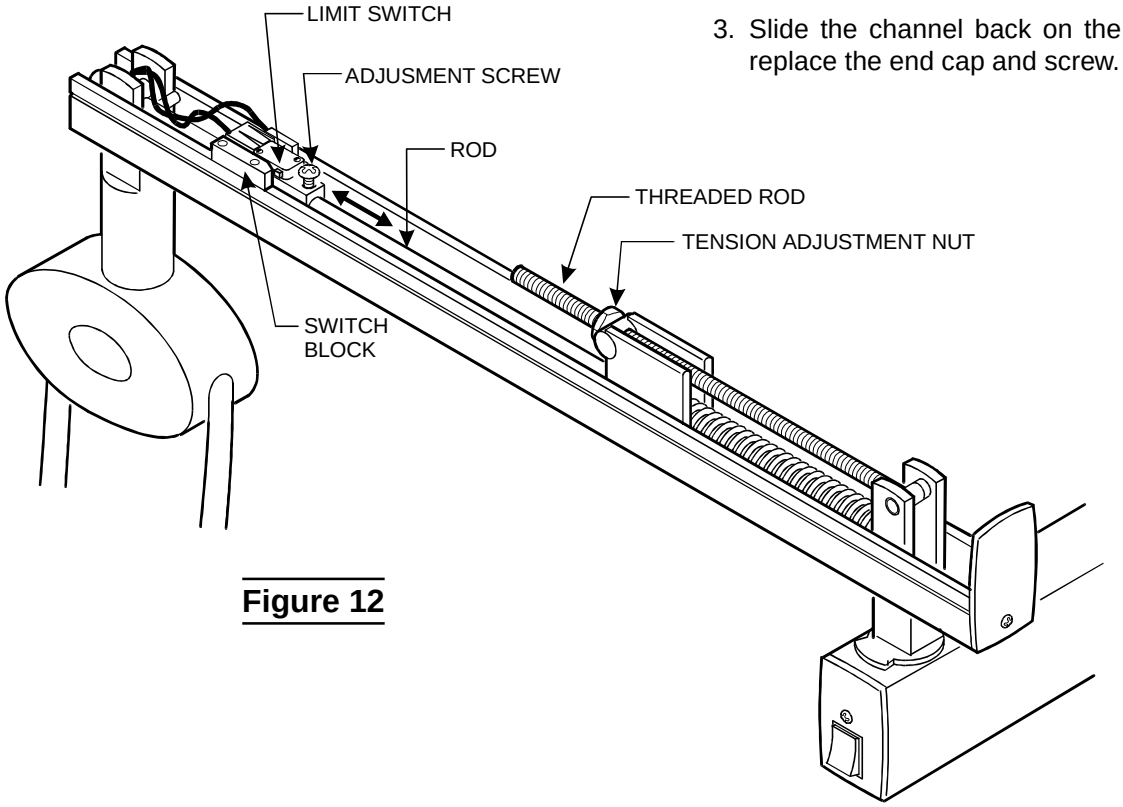


Figure 12

SECTION IV - ADJUSTMENTS (CONT)

4. AUTOMATIC ON/OFF ADJUSTMENT

Turn the switch on the back of the light head to Auto On. As the light head and arm are moved up and down an adjustable limit switch will turn the light off and on automatically. Use the following procedure to adjust this function:

1. To expose the interior of the flex arm, remove the end cap and screw and slide the channel off the assembly (See Figure 11).

2. Raise or lower the light head and arm assembly to the position where the operator would like the automatic on/off to be activated.

3. Loosen the adjustment screw and slide the limit switch along the rod until it makes contact with the switch block and the light turns OFF (See Figure 12).

4. Tighten the adjustment screw. Slide the channel back on the flex arm and replace the end cap and screw..

4. FLEX ARM HEIGHT ADJUSTMENT

If the light is installed with a short extension tube, the flex arm may contact the ceiling or track. In this case the height range requires adjustment. Use the following procedure.

1. To expose the interior of the flex arm, remove the end cap and screw and slide the channel off the assembly (See Figure 11).

2. Using an allen wrench, adjust the height adjusting set screw (See Figure 12). Tightening the set screw will shorten the height range.

SECTION V - BULB REPLACEMENT

All Model "L" light heads are pre-assembled at the factory with the bulb and shields in place. If it becomes necessary to replace the bulb during installation, please use the following procedure:

WARNING: The light bulb operates at extreme high temperatures. Do not attempt to remove the bulb until it has cooled for at least 2 minutes after the light has been turned off.

1. Remove the lamp shield and reflector cover by pushing in and turning the lamp shield **counter clockwise** (See Figure 13).

2. Remove the bulb by pulling straight out (See Figure 14).

3. To install the new bulb, align the contact pins with the socket holes and press the bulb in firmly.

CAUTION: Install the bulb without removing its protective plastic cover (See Figure 15). Finger marks left on the bulb glass during installation will reduce the bulb life. If the bulb is accidentally handled, wipe it clean immediately with denatured alcohol.

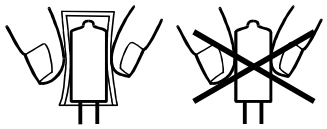


Figure 15

4. Place the reflector cover in position over the reflector (See Figure 13). Insert the lamp shield through the hole in the reflector cover and onto the socket holder (make sure to align the locking tabs). Push in and turn the lamp shield approximately 1/8-turn **clockwise** to lock in place.

WARNING: Do not operate the light without the plastic reflector cover in place. Operating the light without the cover could result in personal injury.

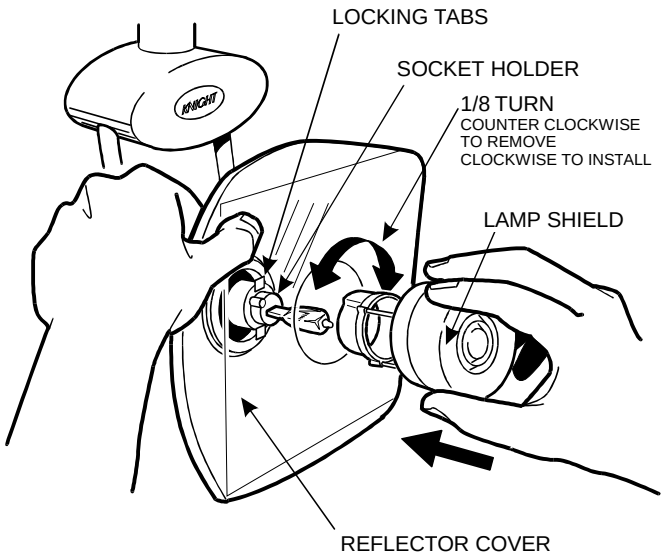


Figure 13

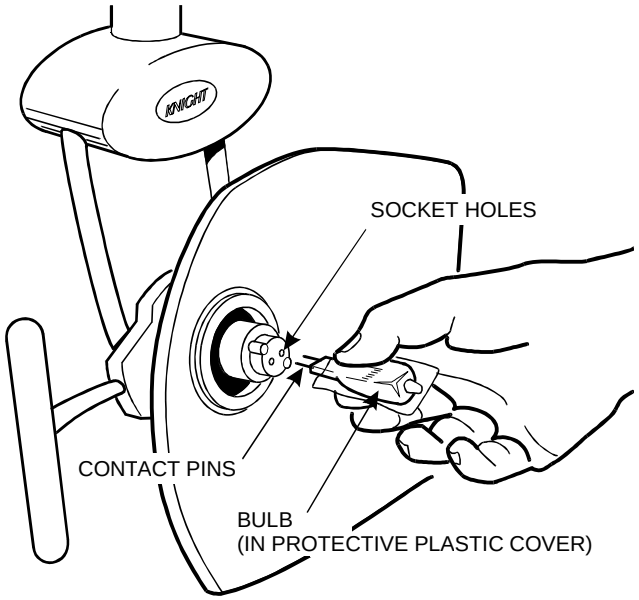


Figure 14

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SECTION VI - FINAL CHECK LIST

When all the assembly and installation procedures are completed, the light should be checked out in accordance with the following check list to ensure that assembly is complete and that all controls function properly.

- ☐ Check all switches for proper operation.
- ☐ Check the complete assembly to make sure it is level and plumb.
- ☐ Check the complete assembly to make sure it is stable and properly supported by the ceiling structure.
- ☐ Check the light arm and light head assembly for smooth and unobstructed movement.
- ☐ Make sure the stop rotation limit is properly set.
- ☐ Be sure that all optional equipment has been installed.
- ☐ Check that all shipping tape and other packaging materials have been removed and disposed of.
- ☐ Make sure that the light has been cleaned and that all dirt and finger prints have been removed.
- ☐ Be sure the person who will operate the light receives the operators manual and any other appropriate information or instructions.

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NOTES

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DECLARATION OF CONFORMITY

MIDMARK CORPORATION

Midmark Corporation declares that Model L Light conforms to the applicable requirements of the Medical Device Directive 93/42/EEC, Annex VII.

Serial Numbers: LL3055 to present.

Quality Assurance Manager

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October 18, 1999

TPW1769 Rev. B (10/99)

KA940700

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